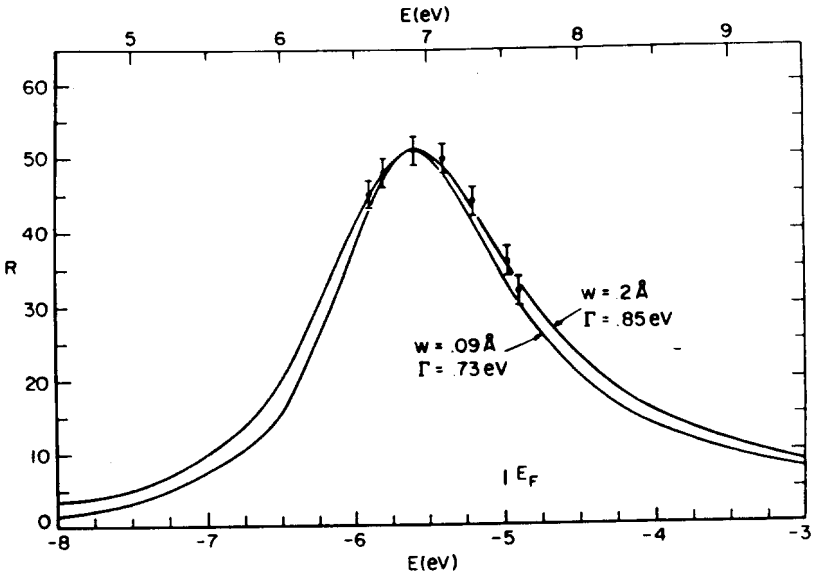

Fig. 3. Energy dependence of the ratio of the adsorbate-induced change in the TED to that of the clean surface, $R \equiv \Delta j'(\varepsilon)/j_0'(\varepsilon)$ vs. ε for a single zirconium atom on a tungsten field emission tip. Comparison of experiment with theory. The top energy axis is taken with respect to a zero at the bottom of the tungsten conduction band, while the zero for the bottom axis is at the vacuum potential outside the tip.

appointment as a Distinguished Professor of Physics at the University of Tennessee and as a Distinguished Scientist in the Solid State Division of Oak Ridge National Laboratory. He has authored or co-authored more than 260 papers reporting on a wide variety of physical and chemical properties of surfaces and interfaces, as probed with a multitude of experimental techniques, always maintaining close coupling with theory. He received the 1983 Davisson-Germer Prize from the American Physical Society. Gadzuk remains at NBS/NIST, and for several years he was a "permanent" visiting professor jointly at NORDITA (Copenhagen) and Chalmers University (Goteborg). His research activities, resulting in over 150 papers, have been mainly in surface-related areas of theoretical atomic, molecular, solid state, and chemical physics, with special attention focused on the fundamental similarities existing in seemingly different fields of physics. He is currently interested in the dynamics of molecular processes at surfaces, particularly those aspects pertinent to the development of Femtochemistry at Surfaces involving hot electrons produced both by ultrafast lasers and by tunneling devices. He was a recipient of the Arthur S. Fleming Award, given annually to the ten outstanding young men and women in the U.S. Federal service. Following the resonance tunneling work, Young brought to fruition his scanning device for measuring surface topography which, as acknowledged by the 1986 Physics Nobel Committee, was a prototype of the scanning tunneling microscope. After abrupt termination of this project in 1971, Young remained at NBS in both a technical and administrative role, first as a Section Chief and then a Division Chief, directing NBS activities in mechanical metrology and robotics until his formal retirement in 1981. Since then he has actively pursued his interests as an inventor; as a private consultant to industry and government (including NIST) on topics in metrology, STM, vibration isolation, and instrument development; and as a grandfather and a sailor. In recognition of his invention of the Topografiner, in 1986 he received a Presidential Citation, and in 1992 he was presented the Gaede-Langmuir Award of the American Vacuum Society.

Prepared by J. W. Gadzuk.